

SIEMENS

CF62 Level 2 Service Manual

SIEMENS
mobile

BE INSPIRED

CF62 Leopard



Clean & distinctive design

Table of Content

1	Cellular Communication	3
1.1	Coverage Concept	3
1.2	GSM Network Architecture	4
1.3	Subscriber Identity Module	5
1.4	WAP (Wireless Application Protocol).....	6
1.5	GPRS (GENERAL PACKET RADIO SERVICE)	7
1.6	K-JAVA APPLICATION	8
2	CF62 Technical Information	9
2.1	Key Features	9
2.2	Comparison With Previous Products	10
3	Accessories.....	11
4	Unit Description CF62 Leopard	12
4.1	Assembling concept for the customer	12
4.2	Interface CF62 Leopard to accessories	12
4.3	Exploded view of CF62 Leopard	13
4.4	Handset parts and defined service parts	15
4.5	PCB top-side	16
4.6	PCB bottom-side	16
5	Disassembly of CF62 Leopard	17
6	Assembly of CF62 Leopard	23
7	Mobile Software Programming	27
7.1	Introduction	27
7.2	Mobile Software Updating	28
7.3	Flow chart for S/W upgrading	29
8	Siemens Service Equipment User Manual	30
9	JPICS (Java based Product Information Controlling System).....	31
10	International Mobile Equipment Identity, IMEI	36
11	General Testing Information	37
Annex 1.....		41
Annex 2.....		42

1 Cellular Communication

1.1 Coverage Concept

The cellular systems is made up of numerous transmitting and receiving sites, whose individual coverage areas partially overlap. The concept of frequency re-use, same frequency is used by several sites, allows a high traffic density in a wide area. Due to the limited transmission range of the terminals, cellular systems are based on a large number of base stations on the infrastructure side, scattered over the area to cover, with each covering a fairly small geographical zone called cell. Cells are often represented by hexagons (see figure 1.1.).

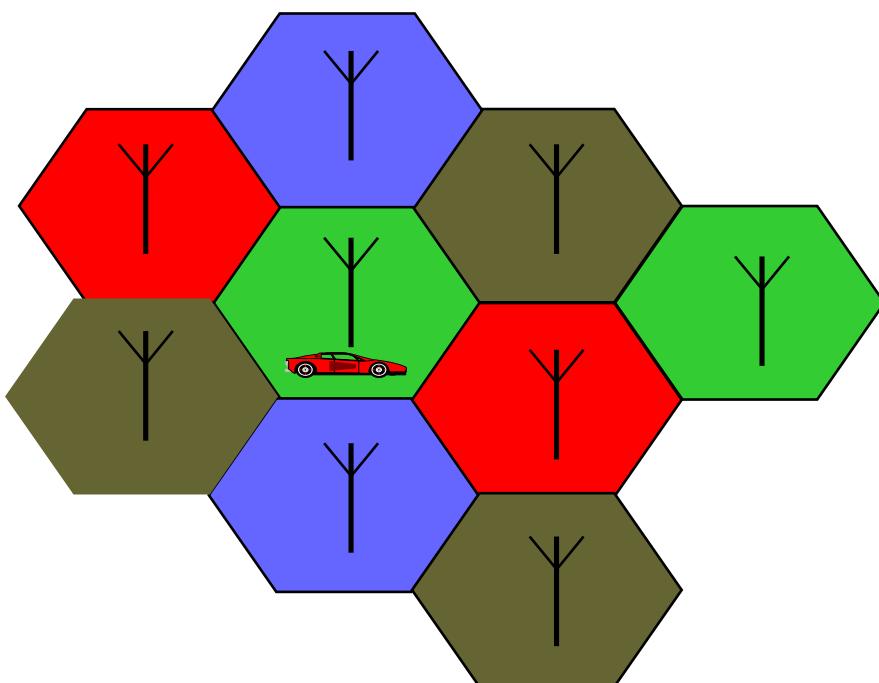


Figure 1.1 CELLULAR COVERAGE REPRESENTATION

1.2 GSM Network Architecture

GSM network can be broadly divided into three broad parts, namely:

1. Mobile Station(MS) carried by the subscriber
2. Base Station Sub-system(BSS) which controls the radio link with the mobile station.
3. Mobile Switching Center(MSC) which performs the switching of calls between the mobile users, and between mobile and fixed network users.

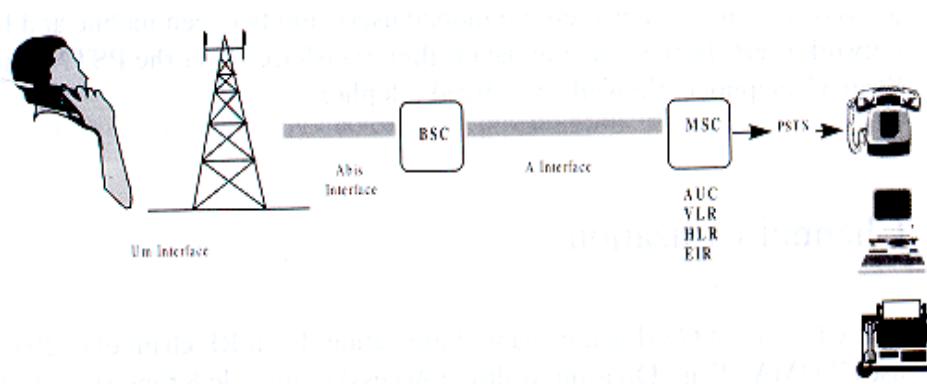


FIGURE 1.2 GSM ARCHITECTURE

Each mobile station is given a unique identity. As soon as the mobile phone is turned on, it registers with the network and is authenticated, as such the network could always find the mobile phone. Larger amount of data is being exchanged to and from the following functional blocks in the MSC:

Visitor Location Register, VLR

Contain relevant data of all mobiles located in the serving MSC, but not belong to the area.

Home Location Register, HLR

Stores identity and user data of all the mobile users belonging to the area.

Authentication Center, AUC

Provides the HLR with different sets of parameters to complete the authentication of the mobile station.

Equipment Identity Register, EIR

An option the network operator can use to enforce security. With this feature the network can identify defective or stolen mobile that may not be used in the network.

1.3 Subscriber Identity Module (SIM)

SIM is a smart card which has a computer and memory chip that is permanently installed in the mobile equipment. It comes in either the size of a credit card or smaller version known as the plug-in SIM.

SIM card using 5V technology is not supported.

The subscriber information, which includes a unique number called the International Mobile Subscriber Identity (IMSI) is stored in the SIM card. SIM card identifies the subscriber to the network.

To protect the SIM card from improper use, a security feature, a four digits personal identification number (**PIN**), is built in. The PIN is stored in the card and can be changed by the subscriber. **PIN2** Is required for additional functions available with a special SIM card (Consult the operator for more Information about the **PIN 2**).

A code (PUK) is provided for unlocking the SIM card if the SIM card is blocked

**To deactivate SIM locked, due to wrong PIN entry,
Get the unlock code from the operator.**

1.4 WAP (Wireless Application Protocol)

Wireless Application Protocol takes a client-server approach that uses the in-built micro-browser to make a request, in wireless markup language (**WML**), for information or service. The request is passed to a WAP Gateway, which then retrieves the information from a Internet server, in HTML format, and translate it into **WML**. The requested information is then sent to from the **WAP** Gateway to **WAP** client (mobile) using the available and most appropriate mobile network bearer services.

Wireless Protocol Stack.

Wireless Application Environment (WAE)
Wireless Session Protocol (WSP)
Wireless Transaction Protocol (WTP)
Wireless Transport Layer Security (WTLS)
Wireless Datagram Protocol (WDP)
Bearers e.g. Data, SMS, USSD

TABLE 1.1 WAP PROTOCOL STACK

1. Wireless Application Environment

Defines the user interface on the phone. **WAE** contains the **WML**, **WML**, script and the wireless telephony application (**WTA**).

2. Wireless Session Protocol

Link the **WAE** to two session services – one connection oriented operating above the **WTP** and a connectionless service operating above **WDP**.

3. Wireless Transaction Protocol

Runs on top of the datagram service and part of the standard suite of **TCP/IP** protocols, to provide a simplified protocol suitable for low bandwidth mobile station.

4. Wireless Transport Layer Security

WTLS incorporates security features that are based upon the established Transport layer Security (**TLS**) protocol standard, that include data integrity checks, privacy on the WAP Gateway to client leg and authentication.

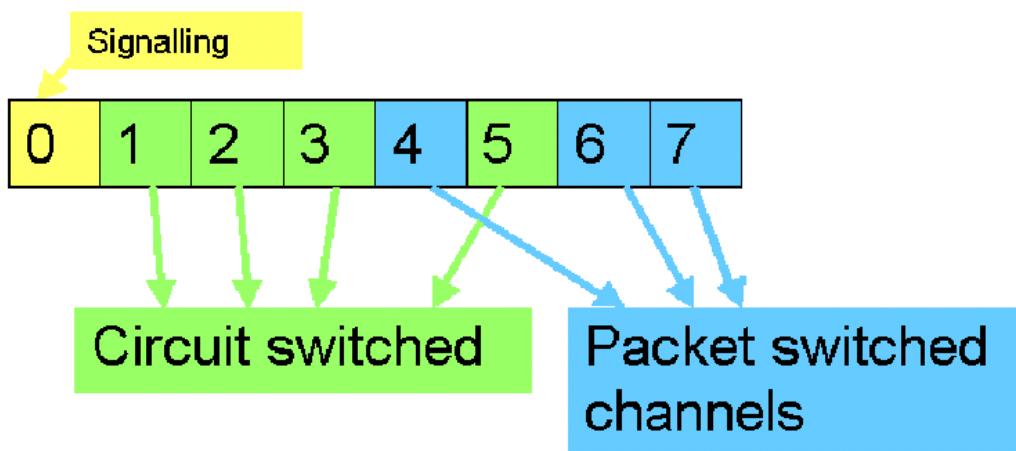
5. Wireless Datagram Protocol

Allows **WAP** to be bearer independent by adapting the transport layer of the underlaying bearer. **WDP** presents a consistent data format to the higher layer on the WAP stack.

WAP Internet access via the CF62 is possible with the inclusion of Wireless Application Protocol (**WAP**) browser 1.2.1.

1.5 GPRS (GENERAL PACKET RADIO SERVICE)

GPRS is a new non-voice value added services that allows information to be sent and received across a GSM mobile telephone network. It supplements today's Circuit Switched Data (CSD) and Short Message Services (SMS). GPRS involves overlaying a packet based air interface on the existing circuit switched GSM network. This gives the option to use a packet-based data service. The information is split into separated but related "packets" before being transmitted and reassembled at the receiving end. Theoretically, maximum speeds of up to 171.2 kilobits per second (kbps) are achievable with GPRS using all eight timeslots at the same time. This is about 3 times as fast as the data transmission speed possible over today's fixed telecommunications networks and 10 times as fast as current Circuit Switched Data services on GSM networks.



Example: Cell with 1 Frequency channel:

1 physical channel for signaling, 4 physical channels for Circuit switched and 3 physical channels for Packet switched.

1.6 K-JAVA APPLICATION

Java-based game system		
Java Application Manager (JAM)	Application launcher and download manager. Supports HTTP-based OTA download of applications over GPRS and CSD.	yes
RAM for Java applications	Available RAM for Java applications (i.e. Program code and data) during application runtime: Minimum 100 Kbytes (Has to be taken as working assumption for application development). Goal: 145 Kbytes as SL45i (not committed).	yes
MIDP 1.0, CLDC 1.0	As SL45i, including performance optimizations from SL45i-Infusio.	yes
'OEM extensions'	Proprietary API extension as SL45i. Including 'Siemens Game API'.	yes
HTTP API over GPRS	SL45i: only CSD	yes

2 CF62 Technical Information

2.1 Key Features

System/Standards:	<ul style="list-style-type: none"> • Triple-band • GSM900/1800/1900 • US:850/1800/1900
Volume:	<ul style="list-style-type: none"> • 78cm3
Weight:	<ul style="list-style-type: none"> • 85g
Antenna:	<ul style="list-style-type: none"> • External Loop
General:	<ul style="list-style-type: none"> • SMS, EMS & MMS • Java MIDP 1.0 • GPRS Multislot Class 10 • WAP 1.2.1, parts of 2.0 • Hands free operation
Battery:	<ul style="list-style-type: none"> • Lilon Battery Pack 600mAh • Power Input:2A(0.6ms)/0.25A(4ms) • Cut-off Threshold 3.2V
Stand-by Time:	<ul style="list-style-type: none"> • Up to 220 h
Talk Time:	<ul style="list-style-type: none"> • Up to 5 h
SIM Card:	<ul style="list-style-type: none"> • Small ("Plug in") 1.8V or 3V-SIM card(Phase II).
Speech Coder:	<ul style="list-style-type: none"> • Half Rate ,Full Rate, Enhanced Full Rate and Adaptive Multi Rate speech coders are available as standard.
Main Display:	<ul style="list-style-type: none"> • Type: Full Graphic • Resolution: 130 X 130 Pixel • Technology: CSTN • No of Colours: 64K • Frame Rate: 15 frames/sec • Pixel size /mm: 0.21mm X 0.21mm • Active area /mm: 27.3mm X 27.3mm • Illumination: White (3 LEDs integrated)
Sub Display:	<ul style="list-style-type: none"> • Type: Full Graphic • Resolution: 64 X 96 Pixel • Technology: STN • No of Colours: Black & White • Frame Rate: 15 frames/sec • Pixel size / mm: 0.21mm x 0.21mm • Active area / mm: 20.2mm x 13.4mm • Illumination: Blue (2 LEDs integrated)
Keypad:	<ul style="list-style-type: none"> • backside-printed-foil-technology • 12-key-block (0-9, #, *) • two function keys (SEND, END) • ON/OFF key combined with the END key; the symbol \odot (I inside O) is used as a symbol for ON/OFF.

	<ul style="list-style-type: none"> • 4 way-navikey • 2 soft-keys for different SW-enabled functions • tactile finder on key "5" • 11 amber LEDs for keypad
Night Design:	<ul style="list-style-type: none"> • 7 amber LEDs for magic ring
Acoustics:	<ul style="list-style-type: none"> • Three-in-one-earpiece for handset, handsfree and ringing tones • Omnidirectional microphone • Loud signal emitter (soundringer) (>100dB(A) SPL @5cm, 'Hongkong-Spec.') only for rectangular sound signals (NOT POSSIBLE for Soundringer melodies) • Polyphonic ringer tones 16 voices • different selectable volume levels for handsfree, handset and ringer mode (for the amount see SW product description)

2.2 Comparison With Previous Products

Feature	A60 Lion	AE65/A66 Leopard
Supported Systems	Triple Band EGSM 900/GSM 1800/ GSM 1900 (EMEA, APAC) GSM 850/GSM 1800/ GSM 1900 (NAFTA)	Triple Band EGSM 900/GSM 1800/ GSM 1900 (EMEA, APAC) GSM 850/GSM 1800/ GSM 1900 (NAFTA)
Stand-by Time	Up to 250 h	Up to 220 h
Talk Time	Up to 5 h	Up to 5 h
Battery Technology	Li-Ion Battery Pack	Li-Ion Battery Pack
Battery Capacity	NOMINAL CAP: 700 MAH	NOMINAL CAP: 600 MAH
Weight	Approx. 85 g	Approx. 85 g
Volume	Approx. 91 cm ³	Approx. 78 cm ³
Length	110 mm	81.5 mm (w/o Antenna)
Width	47 mm	45.2 mm (max.)
Thickness	23 mm	21.9 mm (max.)
SIM	Plug-In 3V	Plug-In 1.8V/3V
Antenna	Integrated	Internal within the handle
Antenna Performance in comparison to S35:	-0.8 dB @ 900 MHz -0.5 dB @ 1800 MHz	-0.8 dB @ 900 MHz -0.5 dB @ 1800 MHz
Antenna Performance in comparison to C56	0 dB @ 1900 MHz	-1.5 dB @ 1900MHz
Half Rate	Yes	Yes
Enhanced Full Rate	Yes	Yes

Feature	A60 Lion	AE65/A66 Leopard
AMR	Yes	Yes
Fax/Data	No	Yes
GPRS	Yes (Class 8)	Yes (Class 10)
Keypad Illumination	Yes (amber)	Yes (amber)
Display / Display Illumination	CSTN 4k colours (101x80 dots)	Main: CSTN 64k colours (13x130); Subdisplay: STN B/W (96x64)
Ringer volume level	Min. 100 dB(A) @ 5cm Typ. >103 dB(A) @ 5cm	Min. 95 dB(A) @ 5cm Typ. ≥98dB(A) @ 5cm (for dedicated Siemens-standard melodies) Min. 100dB(A) @ 5cm (only for rectangular sound signals)

3 Accessories

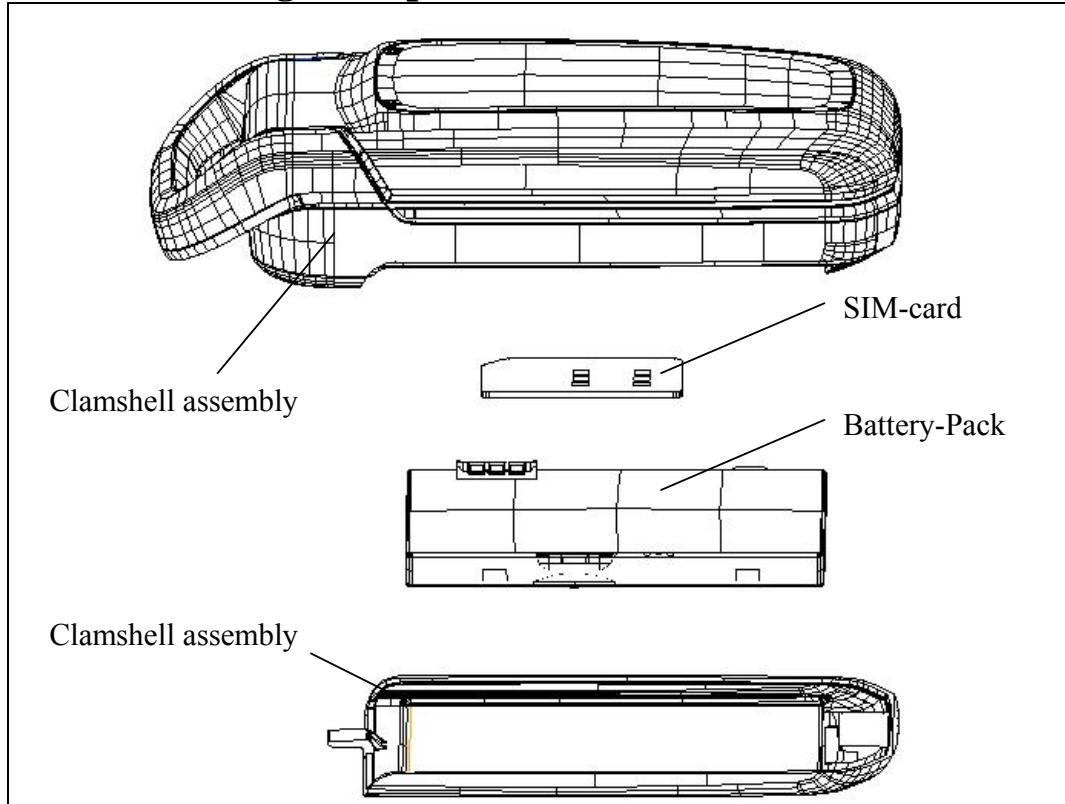
Accessories Parts

L36104-F3090-X903	Handsfree Loudspeaker
L36146-A2053-D	Con.Cable Battery Install. Comfort GPS/rat
L36158-A91-C16	Mounting plate for Basemodule KFZ-Cradle C55/M55/S
L36254-Z6-C95	Handsfree Micro CarKit Comf. aktiv S45/ME45/C45/M5
L36280-Z4-C404	Power Supply EU
L36880-N5601-A103	SyncStation DSC-500 C55/S55/S57/SL55/M55/MC60/SX1/
L36880-N5601-A104	Travel Charger EU ETC-500
L36880-N5601-A105	Travel Charger UK ETC-510
L36880-N5601-A108	Headset PTT HHS-510
L36880-N5601-A109	Car Kit Portable HKP-500
L36880-N5601-A111	Data Cable USB DCA-510
L36880-N5601-A149	Tour Case FCT-650 C60/A60/CF62/CX65/CXT65
L36880-N6501-A102	Data Cable USB DCA-540 SX1/CX65/CXT65/CXV65/CF62
L36880-S5601-A800	Data Cable Serial without Blister Packaging

4. Unit Description CF62 Leopard

The CF62 Leopard is designed as a clamshell with non-exchangeable housing. The lift cover, base lower and battery cover are lacquered parts (1shot-molding; 1color). Base upper assembly is composed of base upper and light loop by ultra-sonic welding (The base upper is lacquered 1shot-molding part. The light loop is a 2shot-molding part by light loop and galvanized ribs).

4.1 Assembling concept for the customer

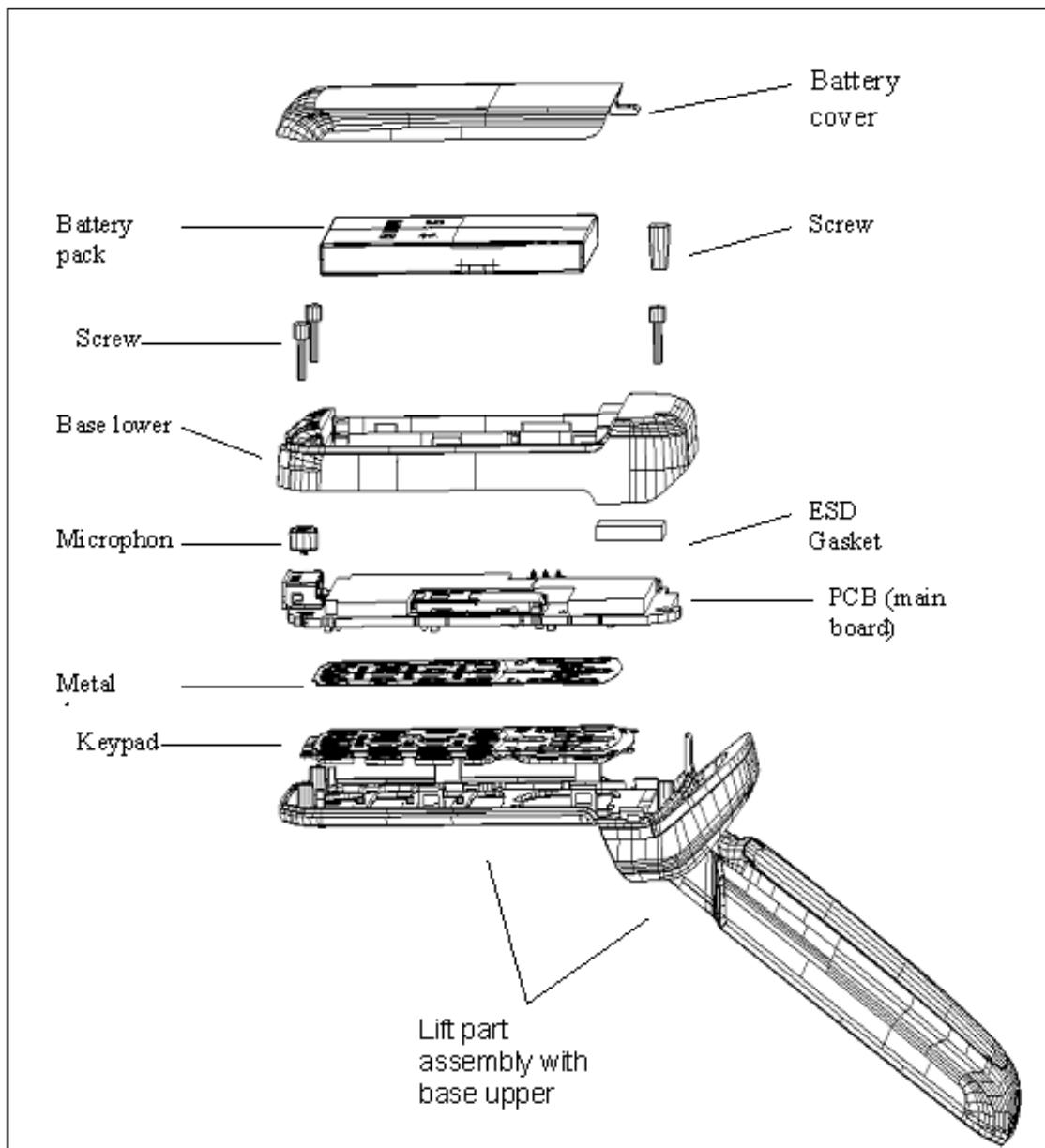


4.2 Interface CF62 Leopard to accessories

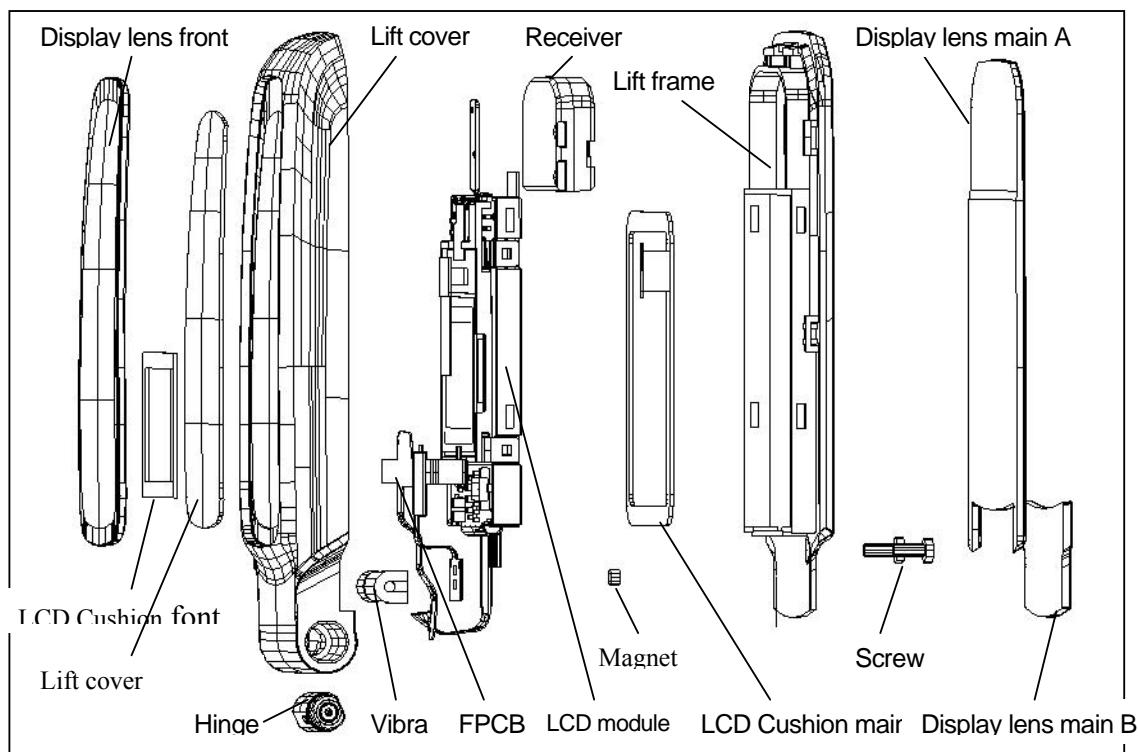
There are no specific mechanical interfaces to the car cradle. The car cradle is designed to fit the existing design. The I/O-Connector (Lumberg-slim-connector) is in use. The compatible interface is suitable to use the travel charger.

4.3 exploded view of CF62 Leopard

- Assembly in total with lift assembly



- Lift part assembly

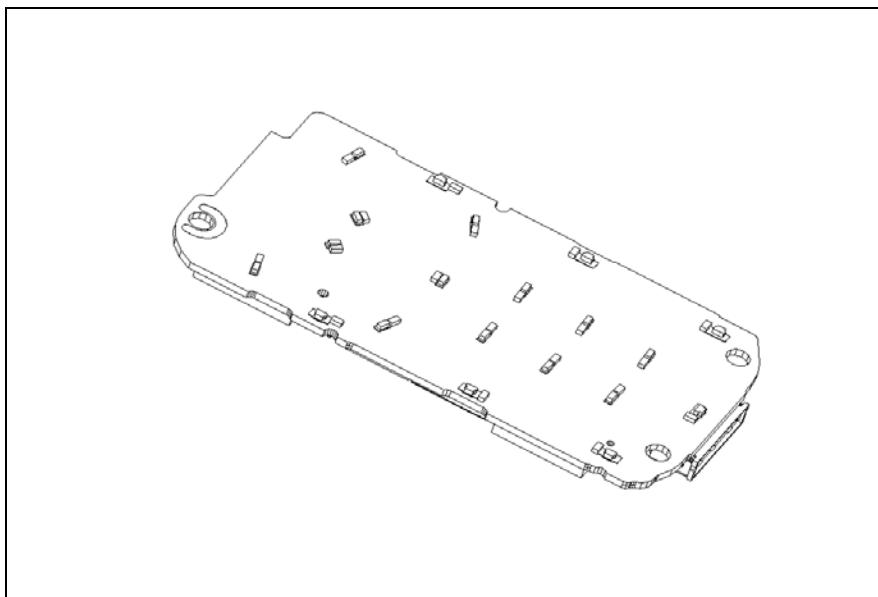


4.4 handset parts and defined service parts

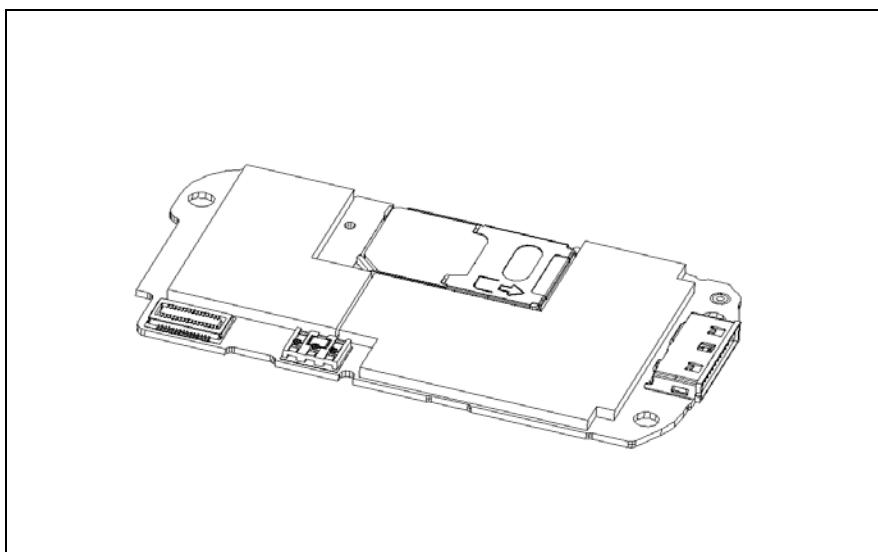
Description	Part-Nr	Repair Lever	Qty.	Comments (concerned sub-parts)
Battery pack CF62	V30145-K1310-X289	Level0	1	
Screw cover CF62	C39158-A120-C400	Level0	1	
Battery cover CF62	C39158-A120-B501	Level0	1	
Base upper assembly CF62	C39158-A120-B201	Level1	1	Base upper (C39158-A120-B201) Bumper (C39158-A120-C330) Triple band antenna (C39158-A120-C80) Antenna lid (C39158-A120-B801), Light loop (C39158-A120-B211).
Keypad CF62	C39158-A120-B600	Level1	1	
Metal dome CF62	C39158-A120-C60	Level1	1	
Base lower	C39158-A120-B251	Level1	1	C39158-A120-B251 (C39158-A120-C42)
Screw 1,6x5,8 L55	C39158-A84-C94-1	Level1	1	For handset
Microphone CF62	C39254-Z6-F402	Level1	1	
Lift cover assembly CF62	C39158-A120-B1	Level1	1	Lift cover (C39158-A120-B1), Lift cover adhesive (C39158-A120-C37), LCD Cushion front (C39158-A120-C41), Display lens front (C39158-A120-B351) (C39158-A120-C340).
Hinge CF62	C39158-A120-C350	Level1	1	
Vibra CF62	V39197-F5009-F887	Level1	1	
LCD module CF62	V39197-F5102-F402	Level1	1	
FPCB CF62		Level1	1	
Receiver assembly CF62		Level1	1	
LCD Cushion main	C39158-A120-C40	Level1	1	C39158-A120-B321 C39158-A120-C342
Lift frame assembly	C39158-A120-B21	Level1	1	Magnet (V39190-F105-F751), Lift frame (C39158-A120-B21), Display lens main A (C39158-A120-B301) (C39158-A120-C341) (C39158-A120-C35).

Display lens main B	C39158-A120-B321	Level1	1	C39158-A120-B321 (C39158-A120-C342) (C39158-A120-C36)
Screw 1,6x4,5 CF62	C39158-A120-C90	Level1	6	Only for Lift part assembly
PCB (Main board)		Level2	1	

4.5 PCB top-side



4.6 PCB bottom-side



5 Disassembly of CF62 Leopard

ESD concept; the internal circuits will be more susceptible to ESD because of the use of exchangeable housing. The construction of the internal block must be/is designed, in the best possible way, to protect the circuit against sparks.

The keypad and the metal dome must be completely closed to prevent any occurrence of an ESD disruptive discharge.

The SIM contacts may be open, thus reachable for ESD contact discharge. This could lead to damage or destruction of the IC pins.

It is a requirement for the service personnel to observe ESD protection rules while performing servicing the CF62.

Disassembly tools:



<p>Step 1:</p>  <p>Front view of the CF62.</p>	<p>Step 2:</p>  <p>Back View of the CF62.</p>
<p>Step 3:</p>  <p>Release the battery cover by placing your thumb in the top centre and press downwards.</p>	<p>Step 4:</p>  <p>Release the battery pack by pressing upwards</p>
<p>Step 5:</p>  <p>Release the screw cover.</p>	<p>Step 6:</p>  <p>Remove the three Base lower screws in the corners with the screwdriver.</p>

Step 7:

The lower edge of the Base lower has now been detached from the phone as shown.

Step 8:

Remove the Base lower by carefully lifting it up.
Note: Be careful not to break or bend the top plastic pin.

Step 9:

Remove the Microphone from the Base upper assembly.

Step 10:

Detach the FPCB-cable connector from the PCB (Main board) Assembly.

Step 11:

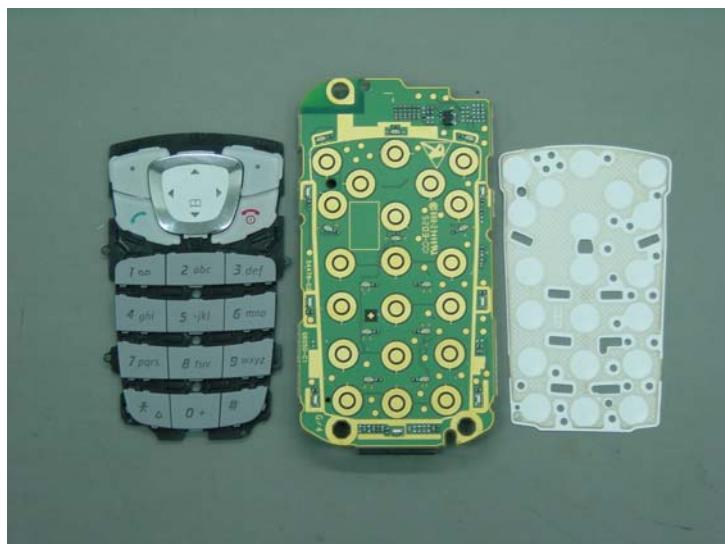
Remove the PCB Assembly by holding it of both in the middle and lifting it straight up.

Step 12: Detach the PCB Assembly:**A:**

Remove the Keypad from the PCB (main board) with the tweezers.

B:

Remove the Metal dome from the PCB (main board) with the tweezers.

C:

Fully disassembled the PCB Assembly.

Step 13:

To separate the Lift part assembly from the Base upper assembly, push the hinge catch inwards with a pair of special driver.

Step 14:

Lift part assembly and Base upper assembly can be seen after disassembled.

Step 15:Detach the Lift part assembly:**A:**

Remove the Display lens main B from the Lift part assembly by using the driver.

B:

Lift part assembly and Display lens main B can be seen after disassembled.

C:

Remove the two screws from the Lift part assembly by using the screwdriver.

D:

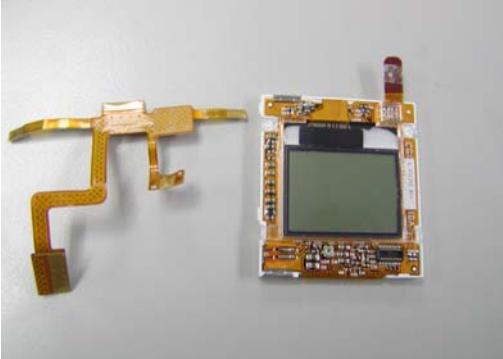
To separate the Lift cover assembly from the Lift part assembly.

E:

Remove the Hinge and the Vibra from the Lift cover assembly.

F:

Remove the LCD module from the Lift frame assembly.

G:  Remove the FPCB-cable from the LCD module by using the tweezers.	H:  Remove the Receiver assembly from the Lift frame assembly.
I:  Remove the LCD Cushion main from the Lift frame assembly.	J:  Fully disassembled the Lift part assembly.
Step 16:  Fully disassembled CF62	

6 Assembly of CF62 Leopard

Step 1:



For the reassembly of the CF62 Lift part assembly, reverse the disassembly procedures Step 14 from J to A. Reassembled Lift part assembly as shown. Set torque to 16 Ncm.

Step 2:



To fix the Lift part assembly to the Base upper assembly, push the hinge catch inwards with a pair of special driver.

Step 3:Reassemble the PCB Assembly

A:



Take a new Metal dome.

B:



Take a PCB (Main board) and detach the protection foil from the new Metal dome with the tweezers.
Take care its two hole (marked with arrows) position.

C:



Press the Metal dome to ensure it is properly glued on the PCB (main board), then prepare a new Keypad.

D:



Place the new Keypad in the assembled Base upper assembly with the glue surface upwards, Detach the protection foil from the new Keypad with the tweezers.

E:



Place the assembled PCB (main board) onto the assembled Base upper assembly with the Keypad through the three pins (marked with arrows), which align the PCB on the correct position.

F:



Remove the PCB Assembly by holding it alongside the center and lifting it straight up, Press the Keypad to make it glued properly.

Step 4:



Place the PCB Assembly onto the Base upper assembly. The three pins (marked with arrows) align the PCB Assembly in its correct place.

Step 5:

Push the FPCB-cable connector downwards until locked in the junction.

Step 6:

Take a new microphone and mount it in its place of the Base lower.

Step 7:

Put the Base lower assembly into the top of the Base upper assembly and align the Base lower assembly to the Base upper assembly. Check that the Base lower assembly is ok and all the components are in their places.

Step 8:

Place the three screws in the holes tightly then install screw cover.

Step 9:

Put the battery into the Base lower as shown.

Step 10:

Slide the Battery cover upwards until the cover locked.

Step 11:

Unfold the Lift part press ON/OFF key as shown.

7 Mobile Software Programming

7.1 Introduction

The common mobile software available is divided into language groups. However, this software does not contain the specific settings, such as ringing tones, greeting text, short dial list etc., required by the operator(s) or service provider(s). Therefore, it is not uncommon to have some menu item(s) differ in different variants or are not visible at all. These settings are stored in different memory area of the mobile and will be activated depending on the customer specific model or variant of the phone by a separate test step during the production process.

Due to this separation of common mobile software and customer specific initialization, it is possible to fulfill the demands of the market requiring customization and flexibility. As a consequence the software programming process in the LSO is divided into two different steps as followed:

- Software update to actual version and appropriate language group
- Programming of customer specific initialization. Include mapping and FFS.

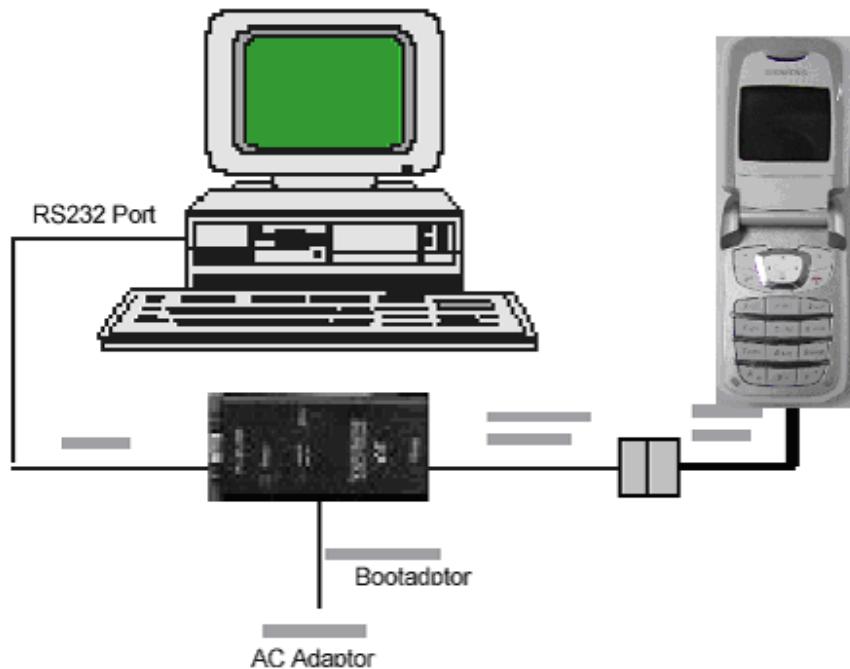


FIGURE 7.1 CF62 SERIES SOFTWARE PROGRAMMING SETUP

7.2 Mobile Software Updating

The software of the mobile, CF62 series, is loaded from a PC directly. Hardware interconnection between the mobile and the PC is shown in Figure 7.1

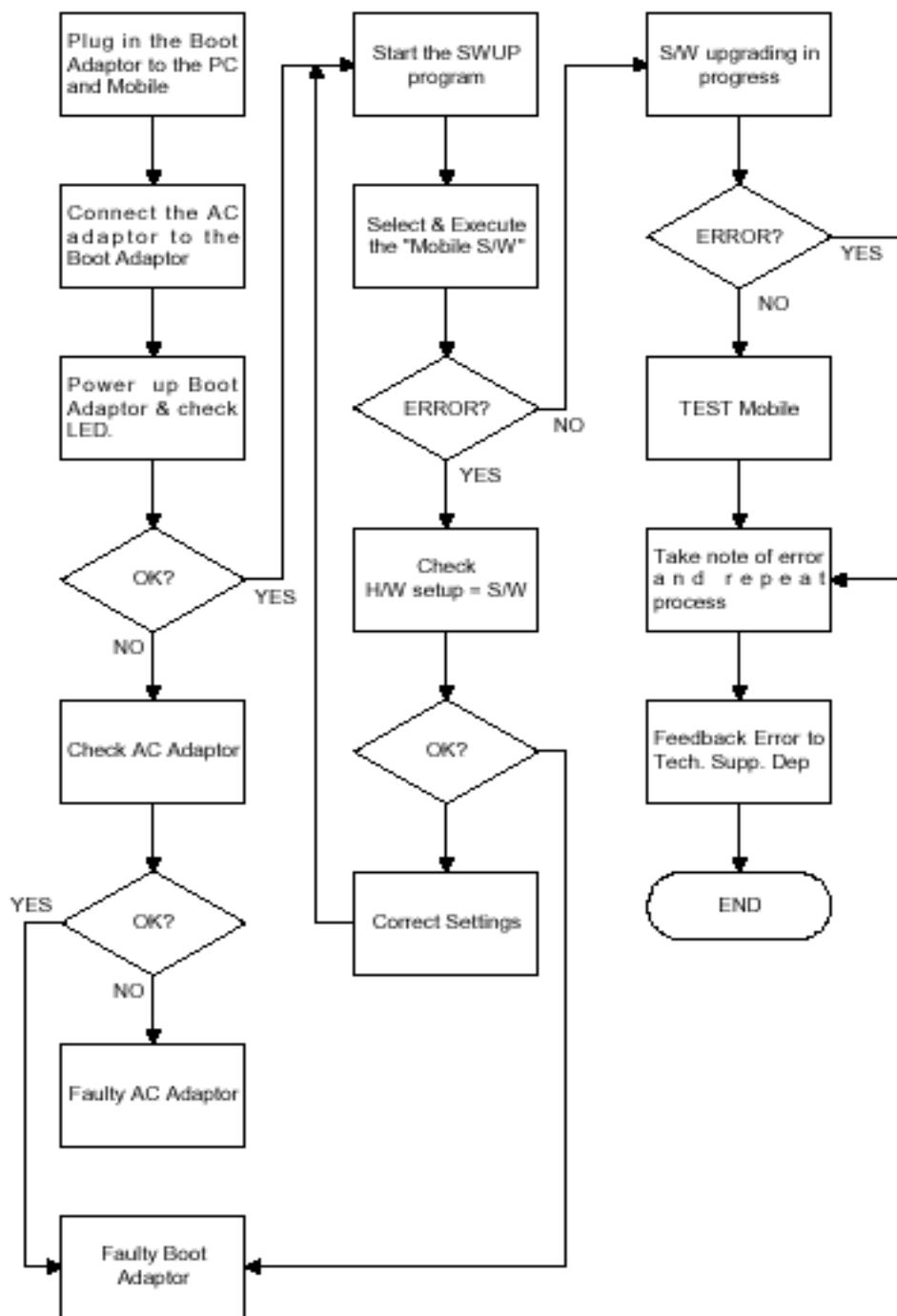
Because of the new type of external connector used in L55 (Slim-Lumberg type) an additional adaptor cable between mobile and boot adaptor is required if the “black boot adaptor” is used. Table 7.1 listed all the hardware requirements

If you use the battery dummy, make sure that the power supply voltage is correctly adjusted.

Description	Part No.
Bootadapter 2000 incl. AC-Adapter, serial cable and mobile connection cable	L36880-N9241-A200
IBM Compatible PC – Pentium	-

TABLE 7.1 EQUIPMENT LIST FOR SOFTWARE PROGRAMMING.

7.3 Flow chart for S/W upgrading



FLOW CHART FOR S/W PROGRAMMING PROCESS

8. Siemens Service Equipment User Manual

Introduction

Every LSO repairing Siemens handset must ensure that the quality standards are observed. Siemens has developed an automatic testing system that will perform all necessary measurements. This testing system is known as:

Siemens Mobile Service Equipment

Using this system vastly simplifies the repair of the phones and will make sure that:

1. All possible faults are detected
2. Sets, which pass the test, will be good enough to return to customer.

Starting from the P35 Series, Siemens will introduce a simpler and faster testing platform for testing a repaired Siemens mobile phone. The testing platforms are either base on R&S CMD 53/55 , CTS30/55 or CMU200GSM test set.

There is also test software under development for testing with the Wavetek 4201S / 44xx and the 4107 GSM test set.

9. JPICS (*Java based Product Information Controlling System*)



Figure 1. JPICS log-in page

Overview

The following functions are available for the LSO:

- General mobile information
- Generate PINCODE
- Generate SIMLOCK-UNLOCK-Code
- Print IMEI labels
- Lock, Unlock and Test the BF-Bus



Overview

The following functions are available for the LSO:

- General mobile information
- Generate PINCODE
- Generate SIMLOCK-UNLOCK-Code
- Print IMEI labels
- Lock, Unlock and Test the BF-Bus

The access to the JPICS server which is located in Kamp-Lintfort is protected by chip card and in addition using secure socket layer (SSL) connection.

The JPICS server is only available for authorized users with a specially coded chip card. These chip cards and the administration of the JPICS web server and the PICS database-server can only be provided by the JPICS-TRUST-Center of the **responsible department** in Kamp-Lintfort.

In case of any questions or requests concerning chip cards or administration of the databases please ask your responsible Siemens Customer Care Manager.

Installation overview

The following installation description assumes that a web browser is already installed.
JPICS is tested with the following browsers

1. [Internet Explorer](#) Version 5.5 and higher
2. [Netscape](#) Version 6 and higher

For further information regarding supported browsers, browser version and supported operating systems, see the [Sun FAQ's](#).

Here is a step by step instruction to install all the required components:

It is necessary to follow this order!

1. [Card reader \(Omnikey\)](#)
2. [CardOS interface \(Siemens\)](#)
3. [JPICS Certificates](#)
4. [Java Plugin JVM/JRE \(Sun\)](#)
5. [Java additional components](#)

Every user is responsible for a proper installation matching the license agreements.

For installation and further access you need the following:

1. The JPICS Installation-CD
2. A chip card. Chip cards can be ordered via your responsible Customer Care Manager within Siemens.
3. A supported chip card reader (Smarty or Siemens B1) in order to access your chip card.

Remark:

We recommend using Siemens B1 reader. Similar device to B1 is Cardman 9010.

In the module “**Generate Codes**“you can choose to generate:

- **Master phone codes**
- **Simlock Unlock – Codes**

Master phone codes

The **Master Phonecode** is used to unlock blocked mobiles.

Master Phonecodes can only be supplied for mobiles which have been delivered in a regular manner.

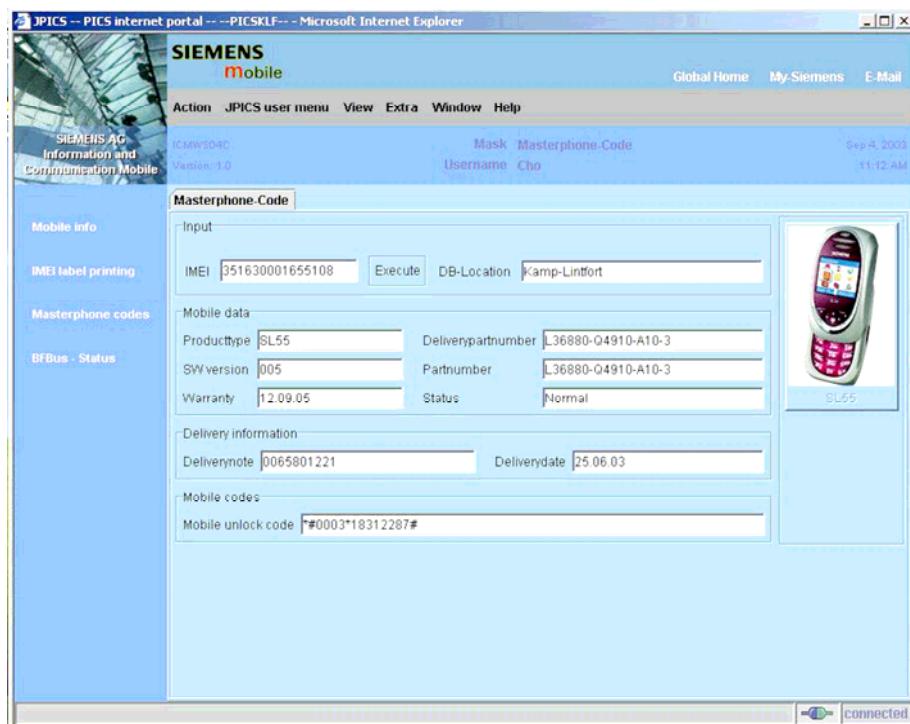
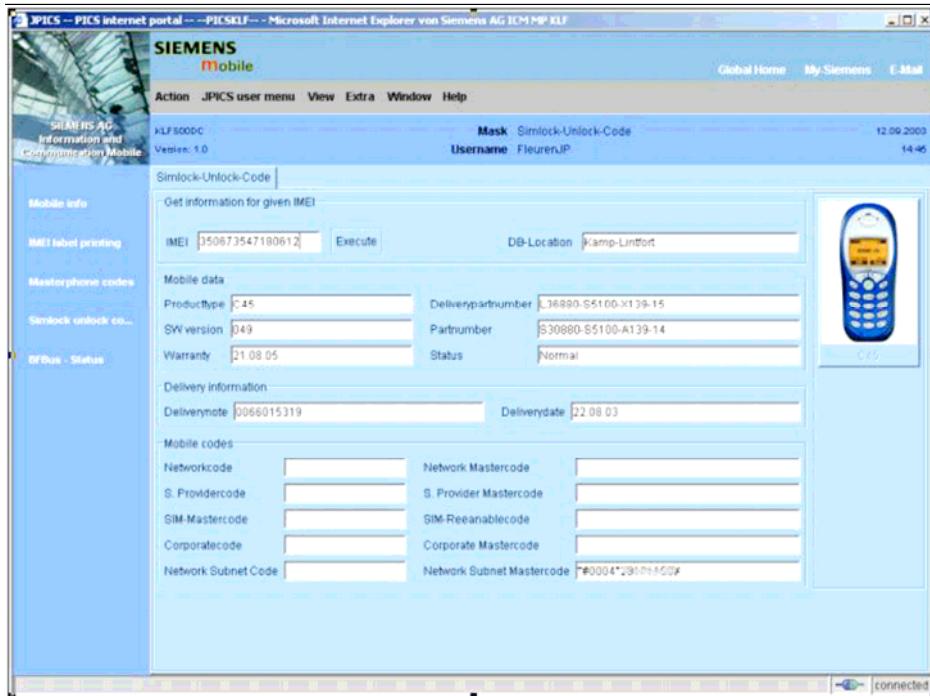


Figure 3. Master phone code page

Simlock Unlock - Code

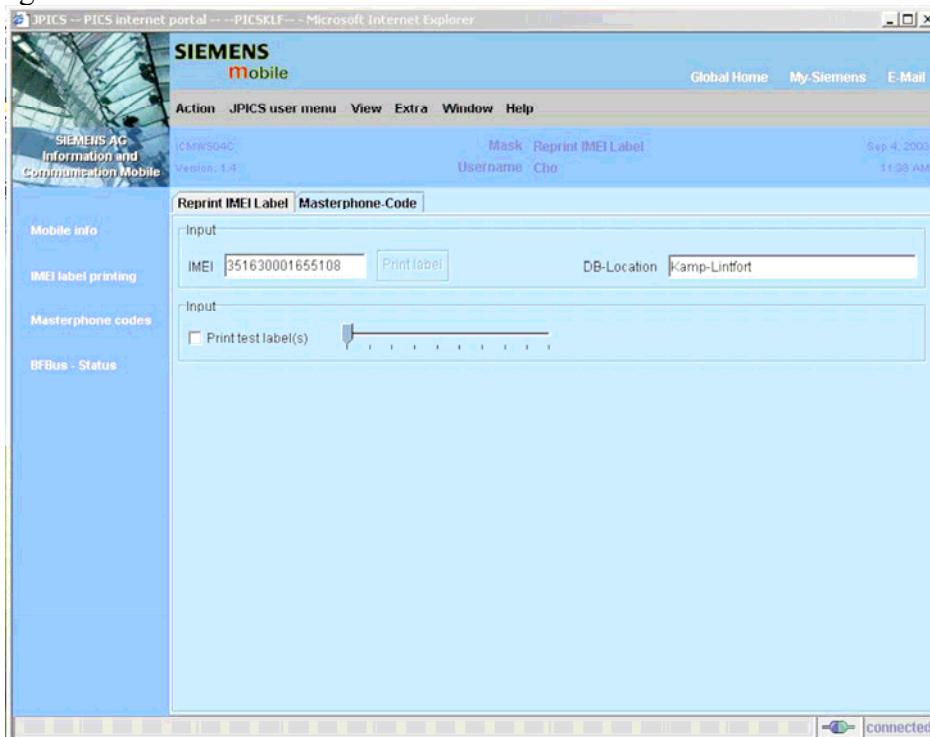
The **Simlock-Unlock-Codes** can only be generated if the following conditions are given:

- Mobile must have an active **Simlock** inside.
- The user must be given the authorization to obtain **Simlock Unlock- Codes** for the variant of the operator to which the mobile was delivered last time.



Printing IMEI label

The module “**Print IMEI label**” offers the possibility to re-print IMEI labels for mobiles again.



You are able to print 1 label in just one step.

To prevent that misaligned labels are being printed, the setting "test printer = Yes" is activated as default. After having printed a well-aligned test label you can switch setting to "No" and print the correct label.

Hint:

For correct printing of IMEI labels you must have a **Zebra – label printer** with special material that fits for label printing. This printer has to be connected to local LPT1 printer port (also see Installation of IMPRINT) and MUST feature a printing resolution of 300dpi.

10. International Mobile Equipment Identity, IMEI

The mobile equipment is uniquely identified by the International Mobile Equipment Identity IMEI, which consists of 15 digits. Type approval granted to a type of mobile is allocated 6 digits. The final assembly code is used to identify the final assembly plant and is assigned with 2 digits. 6 digits have been allocated for the equipment serial number for manufacturer and the last digit is spare.

The part number for the CF62 is S30880-S6050-Axxx where the last 4 letters specify the housing and software variant.

CF62 series IMEI label is accessible by removing the battery.

Re-use of IMEI label is possible by using a hair-dryer to remove the IMEI label.

On this IMEI label, Siemens has also includes the date code for production or service, which conforms to the industrial standard DIN EN 60062. The date code comprises of 2 characters: first character denotes the Year and the second character denotes the Month. For example, the IMEI above show date code **RD**.

Year	Date Code	Month	Date Code
2003	R	June	6
2004	S	July	7
2005	T	August	8
2006	U	September	9
2007	V	October	O
2008	W	November	N
2009	X	December	D

TABLE 8.1 DIN EN 60062 DATE CODE

11. General Testing Information

General Information

The technical instruction for testing GSM mobile phones is to ensure the best repair quality.

Validity

This procedure is to apply for all from Siemens AG authorized level 2 up to 2.5e workshops.

Procedure

All following checks and measurements have to be carried out in an ESD protected environment and with ESD protected equipment/tools. For all activities the international ESD regulations have to be considered.

Get delivery:

- Ensure that every required information like fault description, customer data a.s.o. is available.
- Ensure that the packing of the defective items is according to packing requirements.
- Ensure that there is a description available, how to unpack the defective items and what to do with them.

Enter data into your database:

(Depends on your application system)

- Ensure that every data, which is required for the IRIS-Reporting is available in your database.
- Ensure that there is a description available for the employees how to enter the data.

Incoming check and check after assembling:

!! Verify the customers fault description!!

- After a successful verification pass the defective item to the responsible troubleshooting group.
 - If the fault description can not be verified, perform additional tests to save time and to improve repair quality.
- Switch on the device and enter PIN code if necessary unblock phone.
 - Check the function of all **keys**.
 - Check the **display** for error in line and row, and for illumination.
 - Check the **ringer/loudspeaker** acoustics by individual validation.
 - Perform a **GSM Test** as described on page 56.

Check the charging capability:

- Check internal resistance and capacity of the battery.
- Check battery charging capability of the mobile phone.
- Check charging capability of the power supply.
- Check current consumption of the mobile phone in different mode.

Visual inspection:

- Check the entire board for liquid damages.
- Check the entire board for electrical damages.
- Check the housing of the mobile phone for damages.

SW update:

- Carry out a software update and data reset according to the master tables and operator/customer requirements.

GSM Test:

- Connect the mobile/board via internal antenna (antenna coupler) to a GSM tester.
- Use a Test SIM.
- Skip GSM 900/GSM1800 or GSM1900 test cases if not performed by the mobile phone.

Internal Antenna			
Test case	Parameter	Measurements	Limits
1 Location Update	<ul style="list-style-type: none"> • GSM900 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Display check 	<ul style="list-style-type: none"> • individual check
2 Call from BS	<ul style="list-style-type: none"> • low TCH • PCL 5 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Ringer/Loudspeaker check 	<ul style="list-style-type: none"> • individual check
3 TX GSM900	<ul style="list-style-type: none"> • low TCH • PCL 5 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template 	<ul style="list-style-type: none"> • GSM Spec.
4 Handover to GSM1800 Including Handover Check			
5 TX GSM1800	<ul style="list-style-type: none"> • low TCH • PCL 0 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template 	<ul style="list-style-type: none"> • GSM Spec.
6 Handover to GSM1900 Including Handover Check			
7 TX GSM1900	<ul style="list-style-type: none"> • low TCH • PCL 0 • BS Power = -55 dBm • middle BCCH 	<ul style="list-style-type: none"> • Frequency Error • Phase Error RMS • Phase Error Peak • Average Power • Power Time Template 	<ul style="list-style-type: none"> • GSM Spec.
8 Call release from BS			

External Antenna			
Test case	Parameter	Measurements	Limits
9 Call from MS	<ul style="list-style-type: none"> GSM900 high TCH PCL 6 BS Power = -55 dBm middle BCCH 	Keyboard check	individual check
10 TX GSM900	<ul style="list-style-type: none"> high TCH PCL 6 BS Power = -55 dBm middle BCCH 	<ul style="list-style-type: none"> Frequency Error Phase Error RMS Phase Error Peak Average Power Power Time Template 	GSM Spec.
11 RX GSM900	<ul style="list-style-type: none"> high TCH BS Power = -102 dBm 50 Frames middle BCCH 	<ul style="list-style-type: none"> RX Level RX Qual BER Class Ib BER Class II BER Erased Frames 	GSM Spec.
12 Handover to GSM1800 Including Handover Check			
13 TX GSM1800	<ul style="list-style-type: none"> high TCH PCL 1 BS Power = -55 dBm middle BCCH 	<ul style="list-style-type: none"> Frequency Error Phase Error RMS Phase Error Peak Average Power Power Time Template 	GSM Spec.
14 RX GSM1800	<ul style="list-style-type: none"> high TCH BS Power = -102 dBm 50 Frames middle BCCH 	<ul style="list-style-type: none"> RX Level RX Qual BER Class Ib BER Class II BER Erased Frames 	GSM Spec.
15 Call release from MS			
16 Handover to GSM1900 Including Handover Check			
17 TX GSM1900	<ul style="list-style-type: none"> high TCH PCL 1 BS Power = -55 dBm middle BCCH 	<ul style="list-style-type: none"> Frequency Error Phase Error RMS Phase Error Peak Average Power Power Time Template 	GSM Spec.
18 RX GSM1900	<ul style="list-style-type: none"> high TCH BS Power = -102 dBm 50 Frames middle BCCH 	<ul style="list-style-type: none"> RX Level RX Qual BER Class Ib BER Class II BER Erased Frames 	GSM Spec.
19 Echo Test	<ul style="list-style-type: none"> high TCH PCL 1 BS Power = -70 dBm middle BCCH 		individual check

Final Inspection:

The final inspection contains:

1. A 100% network test (location update, and set up call).
2. A random sample checks of:
 - data reset (if required)
 - optical appearance
 - complete function
3. Check if PIN-Code is activated (delete the PIN-Code if necessary).

Remark: All sample checks must be documented.

Annex 1

Test SIM Card

There are two different “Test SIM Cards” in use:

1. Test SIM Card from the company “**ORGA**”

Pin 1 number:	0000
PUK 1 :	12345678
Pin 2 number:	0000
PUK 2 :	23456789

2. Test SIM Card from the company “**T-D1**”

Pin 1 number:	1234
PUK1 :	76543210
Pin 2 number:	5678
PUK 2 :	98765432

Annex 2**Battery Date Code overview****Date Code overview****Varta****Date code example**

N 8 A VA

Year (N: 2001, O: 2002, ...) Month (1: Jan, 2: Feb, ... 9: Sep, O: Oct, N: Nov, D: Dec) Revision Letter (A, B, ...)

Supplier Code (Makers marking)

Hitachi / Maxell**Date code example**

N 8 A MX

Year (N: 2001, O: 2002, ...) Month (1: Jan, 2: Feb, ... 9: Sep, O: Oct, N: Nov, D: Dec) Revision Letter (A, B, ...)

Supplier Code (Makers marking)

Sanyo**Date code example**

N 8 A SY

Year (N: 2001, O: 2002, ...) Month (1: Jan, 2: Feb, ... 9: Sep, O: Oct, N: Nov, D: Dec) Revision Letter (A, B, ...)

Supplier Code (Makers marking)

NEC**Date code example**

N 8 A NT

Year (N: 2001, O: 2002, ...) Month (1: Jan, 2: Feb, ... 9: Sep, O: Oct, N: Nov, D: Dec) Revision Letter (A, B, ...)

Supplier Code (Makers marking)

Panasonic**Date code example**

O 8 B PAN

Year (N: 2001, O: 2002, ...) Month (1: Jan, 2: Feb, ... 9: Sep, O: Oct, N: Nov, D: Dec) Revision Letter (A, B, ...)

Supplier Code (Makers marking)

Sony**Date code example**

P 8 A SD

Year (O: 2002, P: 2003, ...) Month (1: Jan, 2: Feb, ... 9: Sep, O: Oct, N: Nov, D: Dec) Revision Letter (A, B, ...)

Supplier Code (Makers marking)